

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

AMPLIFY EDUCATION, INC.,

Plaintiff-Counterclaim
Defendant,

V.

Civil Action No. 1:13-cv-02687-LTS-RLE

GREENWOOD PUBLISHING GROUP,
INC. d/b/a HEINEMANN,

Defendant-Counterclaim
Plaintiff.

**DEFENDANT GREENWOOD PUBLISHING GROUP, INC. D/B/A HEINEMANN'S
OPENING BRIEF REGARDING THE PROPER CLAIM CONSTRUCTION OF
DISPUTED TERMS IN HEINEMANN'S 6,299,452 PATENT**

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I. INTRODUCTION

Greenwood Publishing Group, Inc. d/b/a Heinemann (“Heinemann”) has counterclaimed against Amplify Education, Inc. (“Amplify”) for infringement of 61 claims of Heinemann’s U.S. Patent No. 6,299,452 (“the ’452 patent”) entitled “Diagnostic System and Method for Phonological Awareness, Phonological Processing and Reading Skill Testing.” The asserted claims of the ’452 patent contain three groups of means-plus-function limitations—consisting of 30 terms—that require construction by the Court. Amplify has requested construction of an additional 12 non-means-plus-function terms (or groups of terms). Heinemann submits this brief in support of its proposed constructions for the disputed terms of its ’452 patent.¹

II. THE CLAIMED INVENTION OF HEINEMANN’S ’452 PATENT

The ’452 patent is generally directed to a “system and method for testing one or more different areas of phonological awareness, phonological processing, verbal short term memory rapid access naming, phonemic decoding and reading fluency in order to determine if the individual being tested is at risk of having reading problems and the areas in which the individual may need further training.” ’452 patent, 1:8-14. Phonology is the study of the distribution and patterning of speech sounds in a language and of the tacit rules governing pronunciation.

Balakrishnan Decl. ¶ 23.

The system and method can be used or performed directly by the person being tested or by a “parent of a child or a test administrator,” such as a teacher or other skilled person. ’452 patent, 6:34-38 (“Each client computer 54 ... may be used by an individual user, such as a parent of a child or a test administrator, to access the diagnostic tool stored on the server.”); *see also id.* 6:64-67 (“The diagnostic tool 66 may also use a child’s scores on the one or more tools in order

¹ Amplify has sued Heinemann alleging infringement of 60 claims of Amplify’s U.S. Patent Nos. 7,114,126 and 7,568,160. Pursuant to the *Markman* briefing schedule set by the Court, Amplify is concurrently submitting an opening brief regarding the construction of disputed terms of those patents, to which Heinemann will file a responsive brief on July 21, 2014.

to recommend to the user of the client computer (e.g., the parent of the child) which training tools the parent may consider downloading to help the child with any deficiencies.”), *id.* 9:27-29 (“In step 142, the questionnaire may display a first question to the user of the client computer, such as the parent of the child being tested.”); Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5 (“The system permits people with various different knowledge levels ... to administer the diagnostic test. For example, a parent ... may use the system to diagnose a deficiency in his/her child....”).

In the preferred embodiment, a student or other user can access various tests using a client computer that communicates over the Internet with a server. *See* ’452 patent, 3:42-50. The tests are presented to the user and/or person being tested graphically and/or audibly via, for example, a display and/or speakers. *See id.* 6:34-44 (“Each client computer may include ... a display 78, such as a typical cathode ray tube, a flat panel display, or the like.”); *see also* Maier Decl. Ex. 2, ’147 patent, 3:11-13 (“The system includes a speaker system which provides the audible part of the games”); *id.* 3:46-47 (“A speaker, or speaker system, 24 is connected to provide the audible part of the invention.”).² The user (which may include the student, parent, or test administrator) may input responses into the client computer using a variety of input devices, such as a keyboard, mouse, microphone, or touch pad and on-screen response buttons. *See* ’452 patent, 6:34-44; Maier Decl. Ex. 2, ’147 patent, 3:41-47; *id.* Fig. 6. The client computer transmits the responses and other information to the server over a communications network, which, in the preferred embodiment, is the Internet using a communications protocol, such as the

² U.S. Patent No. 6,146,147 is incorporated by reference into the ’452 patent. *See* ’452 patent, 7:3-8 (incorporating by reference “co-pending U.S. patent application No. 09/039,194,” which later issued as U.S. Patent No. 6,146,147). *See Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1329 (Fed. Cir. 2001) (“When a document is ‘incorporated by reference’ into a host document, such as a patent, the referenced document becomes effectively part of the host document as if it were explicitly contained therein.”); *see also Otto Bock Healthcare LP v. Ossur HF & Ossur Ams., Inc.*, 2014 U.S. App. LEXIS 2879, at *13 (Fed. Cir. Feb. 18, 2014) (“[U]sing a U.S. patent application incorporated by reference to define structure for the purpose of 35 U.S.C. § 112, ¶ 6” is proper.).

HTTP³ protocol (*i.e.*, the set of rules computers use to communicate with each other over the Internet). *See* '452 patent, 6:29-33; Balakrishnan Decl. ¶¶ 34-35.

In the preferred embodiment, the server includes a scorer, which can determine a score for each test based on the student's responses as entered by the user. *See* '452 patent, 7:34-42. A recommender may then use the scores to recommend further training modules in order to continue improving the student's skills in any deficient areas. *See id.* 7:48-54. As one example, "the scores may indicate that the child has weak/below average rhyme recognizing skills and the recommender may recommend that the child play the rhyme recognizer training tool in order to boost the child's rhyme recognition abilities." *Id.* 7:54-58.

III.DISPUTED CLAIM TERMS

A. Means-Plus-Function Terms

1. *Introduction to Disputes and Legal Standard*

The parties agree that the 30 terms discussed in this section are means-plus-function terms that should be construed according to 35 U.S.C. § 112(f).⁴ The parties further agree—with two exceptions—on the function associated with each term. The parties disagree, however, regarding the required structures for performing those functions. With respect to this latter issue, Heinemann's constructions closely follow the structures disclosed in the specification. In contrast, Amplify's constructions either conflate the structures for separate and distinct functions or attempt to improperly import structure unnecessary for performing the claimed functions.

The first step in construing a means-plus-function term "is to define the particular function of the claim limitation." *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1333 (Fed. Cir. 2004). "[A] claimed function may not be improperly narrowed or limited beyond the

³ "HTTP" is an abbreviation for "hypertext transfer protocol." *See* '452 patent, 6:8-9.

⁴ Formerly 35 U.S.C. § 112, ¶ 6.

scope of the claim language.” *Lockheed Martin Corp. v. Space Sys./Loral, Inc.*, 324 F.3d 1308, 1319 (Fed. Cir. 2003). “Conversely, neither may the function be improperly broadened by ignoring the clear limitations contained in the claim language.” *Id.* The court must construe the function to include “the limitations contained in the claim language, and only those limitations.” *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002).

After identifying the function, the court “look[s] next to the written description to identify the structure corresponding to the function.” *Lockheed Martin*, 324 F.3d at 1320. “Such a limitation must be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” *Id.* at 1318 (citing 35 U.S.C. § 112, ¶ 6). “[A] court may not import into the claim structural limitations from the written description that are unnecessary to perform the claimed function.” *Acromed Corp. v. Sofamor Danek Grp., Inc.*, 253 F.3d 1371, 1382 (Fed. Cir. 2001). “When multiple embodiments in the specification correspond to the claimed function, proper application of § 112, ¶ 6 generally reads the claim element to embrace each of those embodiments.” *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

The means-plus-function terms can be addressed together in three categories: (1) terms relating to displaying/providing/generating images, audio or other stimuli at a client computer or apparatus; (2) terms relating to receiving a user input; and (3) terms relating to client-server communications (*e.g.*, sending and receiving responses, stimuli, etc.).

2. Means-Plus-Function Terms Relating To Output By A Client Computer or Apparatus⁵

| Claim Term | Agreed Function | Heinemann’s | Amplify’s |
|------------|-----------------|-------------|-----------|
|------------|-----------------|-------------|-----------|

⁵ With respect to the “means for generating...” terms in this group of means-plus-function terms, and the “means for generating...” terms in the group of means-plus-function terms relating to client-server communications discussed below, Heinemann initially proposed that the structure should be a processor running certain algorithms. However, upon further consideration, Heinemann proposes a revised construction for these terms which is closer, though not identical, to Amplify’s construction.

| | | Proposed Structure | Proposed Structure |
|--|--|---|--|
| “means for displaying at least one of a graphical image and audio” (claim 1) | displaying at least one of a graphical image and audio | <u>’452 Patent</u> : Display 78 shown in Figure 1; a display 78 such as a typical cathode ray tube, a flat panel display or the like; and/or speaker. <u>’147 Patent</u> : Display 16 and/or Speaker 24 shown in Figure 1. | Display 78 (Fig.1) & Browser 80 (Fig.1) & Speaker (col. 11, lines 13-15) & HTTP protocol (col. 6, lines 6-13). |
| “means for providing at least two stimuli” (claims 7, 58) | providing at least two stimuli | | |
| “means for generating ... stimulus” (claims 8-10, 12, 59-61, 63) | generating ... stimulus | | |
| “means for displaying a visual stimulus” (claims 16, 67) | displaying a visual stimulus | <u>’452 Patent</u> : Display 78 shown in Figure 1; a display 78 such as a typical cathode ray tube, a flat panel display or the like. <u>’147 Patent</u> : Display 16 shown in Figure 1. | |
| “means for generating at least one visual stimulus” (claims 15, 66) | generating at least one visual stimulus | | |
| “means for generating a plurality of visual stimuli” (claims 17, 68) | generating a plurality of visual stimuli | | |
| “means for generating at least two sound stimuli” (claims 11, 62) | generating at least two sound stimuli | <u>’452 Patent</u> : speaker. <u>’147 Patent</u> : speaker 24 shown in Figure 1. | |
| “means for generating a sound stimulus having one or more sound units” (claims 13, 64) | generating a sound stimulus having one or more sound units | | |
| “means for generating at least one sound stimulus” (claims 14, 65) | generating at least one sound stimulus | | |

The parties agree on the function associated with each term. The parties further agree that the structure includes a display where the function is limited to a “visual” stimulus, a speaker where the function is limited to an audio or sound stimulus, and both a display and speaker where the stimulus may be visual or audio/sound. The dispute centers on whether to construe the claims as having only the structure necessary for performing the agreed-to functions

(as Heinemann proposes), or whether additional structure—a browser and HTTP protocol—should be imported (as Amplify proposes).

a. Heinemann’s Proposed Constructions

The parties agree that these claim terms require “displaying,” “providing,” or “generating” graphical, visual, audio, and/or sound stimuli. The ’452 specification confirms that Heinemann’s identification of the corresponding structure is correct. The specification discloses that the structure for displaying, providing, or generating graphical images or visual stimuli is a display, such as a typical cathode ray tube, flat panel display, or something similar. ’452 patent, 6:38-44 (“Each client computer may include ... *a display 78, such as a typical cathode ray tube, a flat panel display, or the like.*”)⁶; *id.* 8:3-5 (“For example, the child may see one or more items on the *computer screen* in rapid succession...); *id.* 8:22-23 (“Each test 102 may *display images on the display* of the client computer...); *id.* 11:13-15 (“In step 212, the module may *generate a word sound on the speaker* of the user’s computer and may *display an image of the word* being spoken.”).

Similarly, the specification confirms that audio or sound is displayed, provided, or generated using a speaker. *See id.* 11:13-14 (“In step 212, the module may *generate a word sound on the speaker* of the user’s computer and may display an image of the word being spoken.”), *id.* 15:7-9 (“In step 452, a sequence of words and/or digits is spoken with equal intervals between each word or digit through the *speaker of the computer* to the user.”); *see also* Maier Decl. Ex. 2, ’147 patent, 3:11-13 (“The system includes a *speaker system which provides the audible part* of the games”), 3:46-47 (“A *speaker, or speaker system*, 24 is connected to *provide the audible part* of the invention.”).

b. Amplify’s Proposed Constructions

⁶ Throughout this brief, all emphasis is added unless otherwise indicated.

Amplify concedes that a display and/or speaker performs the “displaying” / “providing” / “generating” functions, but improperly argues that the structure must further include a browser and HTTP protocol. Amplify is wrong for at least the following reasons.

First, neither a browser nor the HTTP protocol are necessary to display, provide, or generate graphics or audio. A browser is simply one user interface construct that can be used to render certain Web-based documents (known as “HTML”) on the display. It is not necessary for displaying graphics or audio. Balakrishnan Decl. ¶¶ 52-53, 56. Indeed, the patent and file history disclose non-Web page-based embodiments, such as a local area network or a local CD-based embodiment, which would not require a browser for viewing Web pages. *See, e.g.*, ’452 patent, 3:55-59 (“In more detail, the diagnostic system in accordance with a preferred embodiment of the invention may include one or more software applications that may be stored on a portable media, such as *a CD or a zip disk or may be stored on a server.*”); *id.* 5:55-59 (“It will be appreciated, however, that the system and method in accordance with the invention has greater utility since it may be implemented on other types of computer systems, such as the Internet, a *local area network*, a wide area network or any other type of computer network.”); Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5 (“The various embodiments of the diagnostic system may be implemented using different computer systems...[a]s another example, the system may be implemented [on] some portable media, such as a CD-ROM, *wherein the diagnostic testing system is entirely contained on the CD-ROM and may be run from the CD-ROM* or copied onto a local server at a facility, such as a school.”); Maier Decl. Ex. 2, ’147 patent, 3:57-63 (“In the presently preferred embodiment, the auditory logic 12, phonological game logic 14, and acoustic enhancement logic 26 are loaded to

be run on the microprocessor 10 of a personal computer by *providing these programs on a compact disk or other suitable disks.*”).

Similarly, the HTTP protocol is the set of rules by which clients and servers communicate over a network. Balakrishnan Decl. ¶¶ 34-35. It is not required to display, provide, or generate graphics or audio. *Id.* ¶¶ 52, 56. Because neither a browser nor the HTTP protocol are *necessary* to perform the displaying, providing, or generating functions, Amplify’s inclusion of these additional components is improper. *See Acromed*, 253 F.3d at 1382 (“[A] court may not import into the claim structural limitations from the written description that are *unnecessary* to perform the claimed function.”).

Second, the specification makes clear that both the browser and HTTP protocol are structures that perform functions other than displaying, providing, or generating. The browser permits a user to interact with a Web page-based embodiment of the invention. *See* ’452 patent, 6:45-50 (“Each client computer *may* also include a browser application 80 that ... *may permit the user of the client computer to interact with the Web pages being downloaded from the server 52.*”). Indeed, the browser is located in an entirely separate structure from the display:

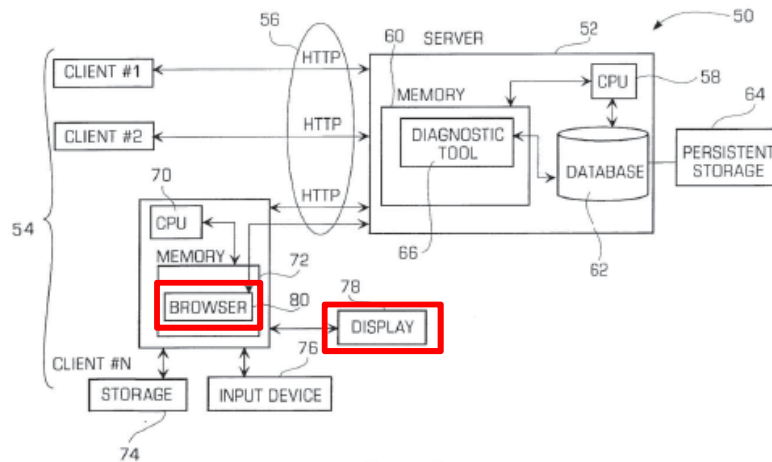


FIGURE 1

Id. Fig. 1 (red boxes added).

Similarly, the specification explains that the HTTP protocol provides structure for sending and receiving communications over a network, such as the Internet. *See id.* 6:6-10 (“In the embodiment shown above, the communications network is the Web and a typical Web communications protocol, ***such as the hypertext transfer protocol (HTTP), may be used for communications between the server and the client computer.***”); *see also id.* 6:29-32 (“In the preferred embodiment, the Web pages ***may be communicated*** to the one or more client computers ***using the HTTP protocol*** and the client computers may send data back to the server....”); *id.* Fig. 1 (showing that HTTP is used for client-server communications). For example, claim 1 requires a “means for communicating the responses ... back to the server computer.” *Id.* claim 1. The HTTP protocol may be used to ***communicate*** a particular visual or audio stimulus or response from one computer to another, but is not necessary to display or present that stimulus to the user at the user’s computer.⁷ Thus, Amplify’s attempt to import this structure into the construction concerning a separate and unrelated function is improper.

Finally, Amplify’s constructions for these terms are inconsistent with its positions on invalidity as set forth in its invalidity contentions. Amplify identified a display, with no browser or HTTP, as meeting this limitation. *See, e.g.,* Amplify’s Patent Local Rules 3-3 Invalidity Contentions (Dkt. 27) (“Amplify’s Invalidity Contentions”), Ex. 1, pp. 6-10; Ex. 5, pp. 4-8.

3. Means-Plus-Function Terms Relating To Receiving A User Input

| Claim Term | Function (Agreed Unless Otherwise Noted) | Heinemann’s Proposed Structure | Amplify’s Proposed Structure |
|----------------------|--|--------------------------------|------------------------------|
| “means for receiving | receiving a user | <u>’452 Patent</u> : Input | Input Device 76 |

⁷ Indeed, even the separate function of communication—addressed below—does not require the HTTP protocol, as the patent explicitly discloses communications protocols ***other than*** HTTP. *See, e.g., id.* 6:6-10 (“***In the embodiment shown***, the communications network is the Web and a ***typical Web communications protocol, such as the hypertext transfer protocol (HTTP), may be used for communications between the server and the client computer.***”).

| | | | |
|--|--|---|---|
| a user response” (claims 1, 11, 14, 62, 65) | response | device 76 shown in Figure 1; Input device 76 such as a keyboard, a mouse, a joystick, a speech recognition microphone or the like; and/or Response buttons 198, 200, such as the “Yes” and “No” buttons (<i>e.g.</i> , as shown in Figure 6). | (Fig.1) & Browser 80 (Fig.1) & HTTP protocol (col. 6, lines 6-13). |
| “means for receiving user input” (claims 7, 58) | receiving user input | | |
| “means for receiving a response” (claims 8-10, 12, 16, 59-61, 63, 67) | receiving a response | | |
| “means for receiving a user’s response” (claims 17, 68) | receiving a user’s response | | |
| “means for generating a response to the tests” (claim 52) | generating a response to the tests | ’147 Patent: Keyboard 18, pointing device 20 shown in Figure 1; speech recognition system; and/or the pointing input device 22 may be, for example, a mouse, track ball, touch pad, etc. | Display 78 (Fig.1) & Browser 80 (Fig.1) & Input Device 76 (Fig.1) & HTTP protocol (col. 6, lines 6-13). |
| “means for segmenting the stimulus into smaller units” (claims 12, 63) | segmenting the stimulus into smaller units | ’452 Patent: Input device 76 shown in Figure 1; Input device 76 such as a keyboard, a mouse, a joystick, a speech recognition microphone or the like; and/or Response buttons 198, 200, such as the “Yes” and “No” buttons (<i>e.g.</i> , as shown in Figure 6). | The structure disclosed corresponding to the claimed function is the user. |
| “means for manipulating the sound units of the sound stimulus” (claims 13, 64) | <u>Heinemann</u> : manipulating the sound units of the sound stimulus <u>Amplify</u> : manipulating the sound units of the sound stimulus in response to the sound stimulus | ’147 Patent: Keyboard 18, pointing device 20 shown in Figure 1; speech recognition system; and/or the pointing input device 22 may be, for example, a mouse, track ball, touch pad, etc. | |
| “means for speaking a/the verbal response into the speech | speaking a/the verbal response into the speech | ’452 Patent: a microphone. | This phrase is indefinite under 35 U.S.C. § 112. For |

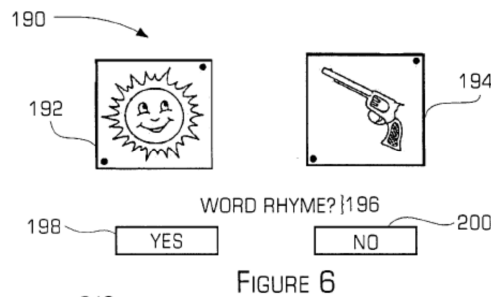
| | | | |
|--|--|--|---|
| recognition device” (claims 6, 57) | recognition device | | example, “speech recognition device” has no antecedent basis. Further, “the verbal response” in claim 6 also has no antecedent basis. To the extent the claim is amenable to construction, the structure disclosed corresponding to the claimed function is the user. |
| “means for speaking the name of or the sound associated with the visual stimulus” (claims 15, 66) | <u>Heinemann</u> : speaking the name of or the sound associated with the visual stimulus <u>Amplify</u> : speaking the name of or the sound associated with the visual stimulus ... using the speech recognition device | | |

The parties agree on the function associated with all but two terms where Amplify proposes an overly broad definition that would encompass separate, non-functional limitations: (1) the stimulus that *precedes* or triggers the claimed function (“in response to the sound stimulus”); or (2) the structure *where* the response is input (“using the speech recognition device”). With respect to the proper structure, both parties agree that some type of “input device” is required. Heinemann’s construction refers to specific input devices identified in the specification—*e.g.*, keyboard, mouse, touch pad, etc.—and, where the input is limited to speech, specifies that the input device is a microphone. Amplify attempts to import additional, unnecessary structure by also requiring a browser, an HTTP protocol and, in one case, a display. Amplify also incorrectly argues that the structure for four of the terms is the user him-or-herself.

a. Heinemann’s Proposed Constructions

The specification supports Heinemann’s construction by unambiguously identifying “an input device 76 such as a keyboard, a mouse, a joystick, a speech recognition microphone or the like” as the structure for receiving user inputs. ’452 patent, 6:41-43. Other types of input

devices, such as a mouse, touch pad, and on-screen response buttons (shown below in Fig. 6) are also disclosed:



Id. Fig. 6; *see also id.* 10:60-63 (“The image may also include ... one or more response buttons 198, 200, such as the ‘Yes’ button and the ‘No’ button in this example.”); Maier Decl. Ex. 2, ’147 patent, 3:41-45 (“The microprocessor 10 is connected to an *input device such as a keyboard* 18. Preferably, the invention may also comprise an *input device in the form of a pointing device* 22. The pointing input device 22 may be, for example, *a mouse, track ball, touch pad*, etc.”); *id.* 4:18-20 (“The player *uses the keyboard 18 and/or the pointer device 20 to respond* to the test using a cursor on the display screen 16.”).

Where the function is limited to audio inputs (*e.g.*, “means for speaking a/the verbal response into the speech recognition device” and “means for speaking the name or the sound associated with the visual stimulus”), the specification is clear that the structure for receiving inputs from the user when the user is speaking is a microphone. *See, e.g.*, ’452 patent, 6:42-43 (“a speech recognition *microphone* or the like”); *id.* 8:4-11 (“[T]he child may see one or more items on the computer screen in rapid succession, *speak the name of each item into a microphone* that is interpreted by the speech recognition software in the client computer. . . .”); *id.* 15:9-11 (“The user then repeats the sequence back using an *input device such as a microphone*. . . .”).

b. Amplify’s Proposed Constructions

i. Amplify Incorrectly Defines The Claimed Function For Two Terms

For two of the claimed functions, Amplify expands the definition of the claimed function to require that “manipulating the sound units of the sound stimulus” be *in response to the sound stimulus* and that “speaking the name of or the sound associated with the visual stimulus” requires *using the speech recognition device*. While the scope of the claim is unchanged since the additional language is still part of the claim, it is inconsistent with how the parties have defined the functions of the other means-plus-function terms. These additional phrases are not part of the function for the term to be construed, but are separate and distinct limitations that describe: (1) the stimulus that precedes the claimed function (*i.e.*, “in response to the sound stimulus”); or (2) the structure to be used for performing the function (*i.e.*, “using the speech recognition device”).

ii. Amplify Improperly Adds Structure Unnecessary To Perform The Claimed Function

With respect to the corresponding structure, Amplify agrees that “input device 76” is the correct structure for receiving a user’s response/input, but seeks to add three additional limitations—browser 80, display 78, and HTTP protocol—to that structure. None of these structures is necessary to perform the claimed functions.

First, as explained above, the browser is simply one example of a structure for rendering Web pages on a display—it is not a necessary structure for receiving a user’s response/input and, indeed, embodiments that do not include a browser are disclosed. *See, e.g.*, ’452 patent, 3:55-59; Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5. The claimed functions describe interactions between a user and the client computer or apparatus, which are accomplished by the direct interface between human and machine—*i.e.*, the input devices, such as a keyboard, mouse, or touch pad.

Second, as explained above, the HTTP protocol is the structure used for client-server communications over the Internet, which is a separate function explicitly claimed in some—but not all—of the asserted claims. *See, e.g.*, ’452 patent, 6:6-10 (“In the embodiment shown, the communications network is the Web and a typical Web communications protocol, such as the hypertext transfer protocol (HTTP), may be used for communications between the server and the client computer.”); *id.* claim 1 (“means for communicating the responses ... back to the server computer”).

Third, unless coupled with a touch screen, a display is an **output**—not **input**—device. Amplify’s identification of a “display” therefore does not describe an input device. Heinemann’s construction, on the other hand, provides that a “touch pad” and on-screen “response buttons” are examples of an input device, and therefore accounts for touch screen displays that can be used for user input. ’452 patent, 10:60-63 (“The image may also include displayed instructions 196 from the module and one or more response buttons 198, 200, such as the “Yes” button and the “No” button in this example.”); *see also id.* Fig. 6.

iii. Amplify Incorrectly Argues That The Structure Must Be The User

With respect to four of the terms, Amplify argues that the terms are either indefinite or that the structure must be the user him-or-herself. Amplify is wrong on both counts.

First, Amplify argues that two of the terms—“speech recognition device” and “the verbal response”—are indefinite because they lack antecedent basis. However, this argument is belied by Amplify’s own ability to propose an alternative construction consistent with how it construed two other terms that it has not argued are indefinite. Nevertheless, even where a term lacks antecedent basis, “[i]f the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.” *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435

F.3d 1366, 1370-71 (Fed. Cir. 2006) (internal quotation marks omitted); *see also id.* at 1371 (“Moreover, ... an antecedent basis can be present by implication.”).

For the terms Amplify argues lack antecedent basis, the scope of the claim is readily ascertainable to a person of ordinary skill in the art. For example, claim 6 requires “speaking the verbal response into the speech recognition device for receiving a verbal response from the user.” ’452 patent, claim 6. A person of ordinary skill in the art would readily recognize that the “speech recognition device” is the structure that receives “the verbal response” from the user. The person of ordinary skill in the art would further understand that this dependent claim describes the “means for receiving a user response to one of the graphical images and audio” recited in claim 1. *Id.* claim 1; Balakrishnan Decl. ¶¶ 66-67. Therefore, the scope of the claim is “reasonably ascertainable by those skilled in the art” and the antecedent basis is “present by implication,” so the claim is not indefinite. *See Energizer Holdings*, 435 F.3d at 1370-71.

Second, Amplify incorrectly argues that the structure for four claim terms (including the two it argues are indefinite)—“segmenting the stimulus into smaller units,” “manipulating the sound units of the sound stimulus,” “speaking a/the verbal response into the speech recognition device,” and “speaking the name of or the sound associated with the visual stimulus [...using the speech recognition device]”—is the user him-or-herself. Amplify again is incorrect.

The claims in which these terms appear are directed to a system that includes a client computer (claims 6, 12, 13, and 15) or an apparatus (claims 57, 63, 64, and 66)—not a person. The functions relate to providing a user input to a client computer or apparatus. The way in which inputs are entered into a client computer or apparatus is through the use of an input device, such as a keyboard, mouse, or touch pad, or a microphone when the input is limited to audio. Balakrishnan Decl. ¶ 69. A person of ordinary skill in the art would therefore understand that

the claim, read in context, is directed to an input device, such as a keyboard, a mouse, a joystick, a speech recognition microphone, or touchscreen display, and not a user's vocal chords. *Id.*

Moreover, the specification confirms that the structure corresponding to the means for segmenting and manipulating is an input device, not a user him-or-herself:

Figure 13 is a flowchart illustrating a method 390 for testing a child's ability to **segment** sounds in which the user's ability to **segment** a unit of sound, such as a word....[I]n the example shown in FIG. 16, the sentence 'I have two brothers' was presented to the user, **the user activated an input device (clicked the mouse button, hit a key or spoke into the microphone)** four times to indicate that four words were heard, and four items 395 are shown on the display.

'452 patent, 13:61-14:9.

Figure 15 is a flowchart illustrating a method 420 for testing a child's ability to **manipulate** sounds...In step 428, the user is asked to rearrange the blocks shown or use the available other blocks (as shown in FIG. 16) to form a new word and user rearranges the blocks **with an input device**.

Id. 14:27-41.

Finally, Amplify's constructions for "means for segmenting..." and "means for manipulation..." are inconsistent with its positions on invalidity as set forth in its invalidity contentions. Specifically, Amplify identified an input device, and not a human, as meeting this limitation. *See, e.g.*, Amplify's Invalidity Contentions, Ex. 2, pp.15-16, 44, 58 (identifying a mouse as the corresponding structure for "means for segmenting..."); *id.* Ex. 26, pp. 45-46 (identifying a mouse for corresponding structure for "means for manipulating...").

4. Means-Plus-Function Terms Relating To Client-Server Communications

| Claim Term | Agreed Function | Heinemann's Proposed Structure | Amplify's Proposed Structure |
|---|---|--|--|
| "means for communicating the responses for each test back to the server computer" (claim 1) | communicating the responses for each test back to the server computer | <u>'452 Patent</u> : Client computer using a communication protocol. | Browser 80 (Fig.1) & HTTP protocol (col. 6, lines 6-13). |
| "means for downloading one or more tests" (claim 52) | downloading one or more tests | | |

| | | | |
|---|--|---|--|
| “means for receiving a recommendation” (claim 52) | receiving a recommendation | | |
| “means for receiving a score” (claim 52) | receiving a score | | No corresponding structure, therefore this phrase is indefinite under 35 U.S.C. § 112. |
| “means for receiving responses” (claim 35) | receiving responses | <u>’452 Patent:</u> Server using a communication protocol. | User Interface 100 (Fig.2) & HTTP protocol (col. 6, lines 6-13). |
| “means for receiving a response” (claims 42-44) | receiving a response | | |
| “means for receiving a user response” (claims 45, 48) | receiving a user response | | |
| “means for receiving a user’s response” (claim 51) | receiving a user’s response | | |
| “means for generating ... stimulus” (claims 42-44) | generating ... stimulus | | |
| “means for generating at least two sound stimuli” (claim 45) | generating at least two sound stimuli | | |
| “means for generating at least one sound stimulus” (claim 48) | generating at least one sound stimulus | | |
| “means for generating a plurality of visual stimuli” (claim 51) | generating a plurality of visual stimuli | | |

Each of these terms relates to client-server communications, including receiving data by a client computer or apparatus (*e.g.*, “means for downloading. . .” in claim 52), sending data from a client computer or apparatus to a server (*e.g.*, “means for communicating the responses for each test back to the server computer” in claim 1), receiving data by a server (*e.g.*, “means for receiving responses” in claim 35), or sending data from a server to a client computer or other apparatus (*e.g.*, “means for generating a plurality of visual stimuli” in claim 51). The parties agree on the function associated with each term. The parties also appear to agree that at least a client, apparatus, or server is required, as well as a communications protocol. The dispute centers on whether the communications protocol should be limited to the HTTP protocol, whether the term “speech recognition software” renders the claim indefinite, and whether the

structure should additionally require particular aspects of a client or server, such as a browser or user interface, respectively, as Amplify proposes.

a. Heinemann’s Proposed Constructions

The specification confirms that the structure for communications between a client, apparatus, or similar device and a server is a client computer or server using a communications protocol. *See* ’452 patent, 6:6-10 (“In the embodiment shown, the communications network is the Web and a **typical Web communications protocol**, such as the hypertext transfer protocol (HTTP), may be used **for communications between the server and the client computer.**”). In terms of structure for performing the sending and receiving functions, nothing more is required.

Dr. Balakrishnan—a Professor of Computer Science at the University of Toronto—confirms that communication protocols were well-known structures for client-server communications at the time of the invention, and a person of ordinary skill in the art would readily understand such protocols to be the structure used for sending or receiving communications at a client or server. Balakrishnan Decl. ¶ 75.

b. Amplify’s Proposed Constructions

Amplify agrees that the structure for client-server communications is a communications protocol, but improperly limits the structure to the HTTP protocol. Amplify further contends that the structure additionally requires a browser or user interface. Finally, Amplify argues that the term “speech recognition software” renders the claim indefinite. Each of these arguments is without merit for at least the following reasons.

First, the specification is unambiguous that the structure for client-server communications is a client or server running a “communications protocol.” The HTTP protocol is a particular communications protocol used by one embodiment, but the patent is clear that any communications protocol may be used. *See* ’452 patent, 6:6-10 (“**In the embodiment shown**, the

communications network is the Web and a typical Web communications protocol, *such as* the hypertext transfer protocol (HTTP), may be used for communications between the server and the client computer.”). The use of the transition phrase “such as,” and the express reference to “the embodiment shown,” demonstrate that the specification more broadly describes “communications protocol[s]” as the structure for client-server communications, and only provides the HTTP protocol as a further example in the particular embodiment being described. *See also id.* 6:29-33 (“In the *preferred embodiment*, the Web pages *may be communicated* to the one or more client computers *using the HTTP protocol* and the client computers may send back data to the server, such as test responses, using the same protocol.”). Thus, the specification broadly discloses a “communications protocol” as structure for client-server communications, and further provides the HTTP protocol only as another example. *See Acromed*, 253 F.3d at 1382-83 (“Under 35 U.S.C. § 112, ¶ 6, a court may not import into the claim structural limitations from the written description that are unnecessary to perform the claimed function. . . . This court will not limit a patent to its preferred embodiments in the face of evidence of broader coverage by the claims.”).

Second, the browser and HTTP protocol are particular to communications over the Internet, and the specification discloses client-server communications that may occur on communication networks *other than* the Internet. *See* ’452 patent, 5:55-59 (“It will be appreciated, however, that the system and method in accordance with the invention has greater utility since it may be implemented on other types of computer systems, such as the Internet, a local area network, a wide area network or *any other type of computer network*.”). This is consistent with the patent’s disclosure of “communications protocol[s]” generally, depending on the particular “type of computer network” employed. For example, a person of ordinary skill in

the art would have understood that a local area network—typically a network limited geographically, such as within an office or school—may utilize a communications protocol that is different from that used for a wide area network or a personal area network. Balakrishnan Decl. ¶ 79.

Third, a user interface is not necessary to perform the claimed functions. *See Acromed*, 253 F.3d at 1382 (“Under 35 U.S.C. § 112, ¶ 6, a court may not import into the claim structural limitations from the written description that are unnecessary to perform the claimed function.”). Indeed, the user interface is expressly described as an optional component of the server. *See* ’452 patent, Fig. 1 (browser shown at client, not server); *see also id.* 7:17-21 (“The server 52 **may include** the ... diagnostic tool 66. The diagnostic tool **may further comprise** a user interface 100....”); Balakrishnan Decl. ¶ 80.

Fourth, contrary to Amplify’s assertion, “speech recognition software” does not render the claim indefinite. Speech recognition software was widely available at the time of the invention, and a person of ordinary skill in the art would have therefore found the disclosure of such standard software as disclosing sufficient structure. Balakrishnan Decl. ¶ 81; *see also* ’452 patent, 7:66-8:3 (“The diagnostic tool may also include speech recognition software that permits the various tests described below, to be used in conjunction with speech recognition technology (a microphone and speech recognition software) on the client computer to enhance the value of the diagnostic tests.”).

Fifth, contrary to Amplify’s assertion, “receiving a score” is not indefinite. The structure for “receiving a score” is the same as that for receiving any other type of data. Balakrishnan Decl. ¶ 82. Client-server communications are agnostic as to the **content** of data being exchanged, regardless of whether it indicates a user response, a test being downloaded from a

server to a client, or a score for a particular test. *Id.* The communication protocol treats all such data the same. *Id.*

Finally, Amplify’s argument is also inconsistent with its positions on invalidity as set forth in its invalidity contentions. Amplify identified a local area network (LAN) as the structure for transmitting a grade to a teacher’s workstation and meeting the “means for receiving a score” limitation. *See* Amplify’s Invalidity Contentions, Ex. 1, pp. 62-63; *see also id.* Ex. 2, p. 50 (identifying that a computer network allows a test score to flow between a server to a subject’s computer).

B. Non-Means-Plus-Function Terms

1. Introduction to Disputes and Legal Standard

Each of the disputed non-means-plus-function elements have a plain and ordinary meaning that can be readily “understood by a person of skill in the art,” such that the terms need no further construction. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005). The Federal Circuit has made clear “that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313. In some instances the technology or term is such that its ordinary meaning “as understood by a person of skill in the art may be readily apparent even to lay judges.” *Id.* at 1314. In such cases, claim construction “involves little more than the application of the widely accepted meaning of commonly understood words.” *Id.* Accordingly, when a claim term is self-explanatory to a person of ordinary skill in the art, the term need not be further defined as “it would [only] introduce unnecessary verbiage to claim language that a jury would understand,” and deprive the patentee of the “full scope of [its] claims.” *Kickstarter, Inc. v. Fan Funded, LLC*, No. 11 Civ. 6909, 2013 WL 214313, at *5 (S.D.N.Y. Jan. 18, 2013); *see also Stanacard, LLC v. Rebtel Networks AB*, 680 F. Supp. 2d 483, 494-95 (S.D.N.Y. 2010).

Amplify seeks to improperly limit the claims to a single embodiment, in many cases not even attempting to construe the disputed term, but instead simply adding limitations before or after the term. In many instances, the limitations Amplify seeks to add to a claim via its “construction” would either render other claim language superfluous or would violate the “cardinal sin” of patent law by improperly importing a limitation from the specification or from other claims, where no such limitation is recited. *See Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004) (stating that interpretations of claims rendering claim terms superfluous is disfavored); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001) (reading a limitation from the specification into a claim where the specification is only describing one example is “one of the cardinal sins of patent law”); *TouchTunes Music Corp. v. Rowe Int’l Corp.*, 727 F. Supp. 2d 226, 233 (S.D.N.Y. 2010) (“A claim construction that renders claim language superfluous is almost always incorrect.”).

2. “individual,” “user,” and “test taker”

| Claim Term | Heinemann’s Proposed Construction | Amplify’s Proposed Construction |
|--|-----------------------------------|--|
| “individual” (claims 1, 3, 18-21, 35, 37, 52, 54) | Plain and ordinary meaning | Individual being tested. |
| “user” (claims 1, 4, 6-7, 10-11, 14, 16-17, 18, 21, 23-24, 27-28, 31, 33-34, 44-45, 48, 51, 55, 57-58, 61-62, 65, 67-68) | Plain and ordinary meaning | These three terms must have the same construction, otherwise one or more of the claims in which they appear are indefinite under 35 U.S.C. § Second 112. |
| “test taker” (claims 8-9, 25-26, 42-43, 59-60) | Plain and ordinary meaning | |

The parties have two disputes regarding these terms: (1) whether they should be construed according to their plain and ordinary meaning—as Heinemann contends—or whether they should be limited only to the “individual *being tested*”—as Amplify contends; and (2) whether they must each have the same construction. The plain language of the claims and the

specification preclude Amplify's attempt to narrow the terms to one embodiment, and principles of claim differentiation weigh against requiring the terms to have the same construction.

a. Heinemann's Proposed Construction

The terms "individual," "user," and "test taker" should be given their plain and ordinary meaning. Each of these terms is commonly understood and self-explanatory to a person of ordinary skill in the art such that no further construction is required. Balakrishnan Decl. ¶ 84. Further, each term should be given its *own* plain meaning, as each claim term is presumed to have its own meaning. *See Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) ("[T]he use of two terms in a claim requires that they connote different meanings...."). For example, claim 1 uses both the term "individual" and "user" separately. Here the "user" can be someone different from the "individual" whose reading skills are being tested. The context of the claims make clear whether the term refers to the person being tested (*e.g.*, "[a] system for testing one or more skills ... *of an individual*") or, more broadly, the person who interacts with the device (*e.g.*, "means for receiving *a user response* to one of the graphical images and audio"). *See, e.g.*, '452 patent, claim 1.

The specification explicitly discloses that the person who "use[s]" the test does not have to be the person being tested, but can be a parent or test administrator:

Each client computer 54 ... may be used by *an individual user, such as a parent of a child or a test administrator*, to access the diagnostic tool stored on the server.

'452 patent, 6:34-38.

The diagnostic tool 66 may also use a child's scores on the one or more tools in order to recommend to the *user* of the client computer (*e.g., the parent of the child*) which training tools *the parent* may consider downloading to help the child with any deficiencies.

Id. 6:64-67.

In step 142, the questionnaire may display a first question to the *user* of the client computer, such as *the parent of the child being tested*.

Id. 9:27-29.

Thus, the patent expressly discloses that the terms “individual,” “user” and “test taker” have their own separate plain meanings.

b. Amplify’s Proposed Construction

Amplify’s proposed construction seeks to limit each term to the “individual being tested.” This is improper for at least the following reasons.

First, the specification directly precludes Amplify’s construction that “individual,” “user,” and “test taker,” are limited to the “individual being tested.” As explained above, the specification explicitly discloses embodiments where the person being tested is not necessarily the “user” of the claimed invention. “[A] claim interpretation that excludes a preferred embodiment is rarely, if ever, correct.” *On-Line Techs., Inc. v. Bodensweewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (internal quotation marks omitted).

Second, Amplify’s construction is contradicted by the prosecution history, which also discloses that a *parent* may be the “user” of the system and that a *child* may be the “individual” being tested. *See* Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5 (“The system permits people with various different knowledge levels ... to administer the diagnostic test. For example, *a parent ... may use the system to diagnose a deficiency in his/her child...*”). In addition, a person of ordinary skill in the art would understand that when testing reading/pre-reading skills in young children, who are often too young to operate a computer device by themselves, assistance from a parent/teacher may be necessary. Balakrishnan Decl. ¶ 43.

Third, Amplify’s assertion that the terms must be given the same meaning violates the principle of claim differentiation, which instructs that different claim terms are presumed to have different meanings. *See Applied Med.*, 448 F.3d at 1333 n.3 (“[T]he use of two terms in a claim requires that they connote different meanings....”). Amplify cannot rebut this presumption, particularly in light of the intrinsic evidence discussed above.

Fourth, Amplify argues that if the terms are not construed the same way, “one or more” unidentified claims in which they appear are indefinite. Amplify fails to specify which claims it argues would be rendered indefinite but, regardless, Amplify is wrong. To the extent Amplify argues that some terms lack an antecedent basis if not construed the same way, Amplify’s assertion is wrong as a matter of law. As noted above, “[i]f the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.” *Energizer Holdings*, 435 F.3d at 1370-71 (internal quotation marks omitted).

For example, claim 8 refers to the “ability of the test taker to recognize the initial phoneme of the stimulus” during a test. ’452 patent, claim 8. Claim 8 depends from claim 1, which, as explained above, recites an “individual” whose “reading skills” are being tested, and also a “user” who actually operates the system. In this case, it would be “reasonably ascertainable”—indeed, it would be clear—to a person of ordinary skill in the art that “test taker” refers back to “individual,” but not necessarily to “user,” since the preamble of claim 1 recites that it is the individual’s reading skills that are being “test[ed].” Thus, there is even more reason to give these terms their plain meaning to allow a person of ordinary skill in the art to apply that meaning as appropriate given the context of the claims. Balakrishnan Decl. ¶ 87.

Finally, Amplify’s construction for these terms is also inconsistent with its positions on invalidity as set forth in its invalidity contentions. For example, Amplify identified a “teacher or

proctor” as the claimed “user,” and not the individual taking the test. *See* Amplify’s Invalidity Contentions, Ex. 5, pp. 4-8 (“With very young children, for example, responses to questions, or whether questions were answered correctly or incorrectly could be manually input *by a teacher or proctor.*”).

3. “client computer”

| Claim Term | Heinemann’s Proposed Construction | Amplify’s Proposed Construction |
|--|-----------------------------------|---|
| “client computer” (claims 1, 4, 55) | Plain and ordinary meaning | A computer in a client/server computer system that communicates with the server computer and that is used by the tested individual to enter test responses. |

a. Heinemann’s Proposed Construction

The term “client computer” has a plain and ordinary meaning that is self-explanatory to a person of ordinary skill in the art, and therefore requires no further construction. Balakrishnan Decl. ¶ 88. Indeed, the ordinary meaning of the term “client” has already been recognized in this district. *See Kickstarter*, 2013 WL 214313, at *5 (“The Court finds that the *ordinary meaning* of [the term ‘client’] applies and is self-explanatory to a person of ordinary skill in the art” and therefore “[t]his term will not be further defined....”).

The patent uses the term “client computer” consistent with its ordinary meaning. For example, it explains that a “client computer” can be used by “an individual user, such as a parent of a child or a test administrator,” that it can communicate with a server, and that it may include a “display.” *See, e.g.*, ’452 patent, 6:6-10, 6:34-38, 8:22-24.

As confirmed by Dr. Balakrishnan, the concept of a client computer was well-understood in the art at the time of the invention, such that persons of ordinary skill would readily understand what the term referred to, and therefore needs no further construction. Balakrishnan Decl. ¶ 88. A client computer is simply the user-facing component in a client-server

architecture, which can be a tablet, laptop, CPU, process, or any other device or software arranged in such an architecture. *Id.*; Maier Decl. Ex. 3, Computer & Internet Dictionary (3d ed. 1999) at 94 (“**client** The client part of a client-server architecture. . . . **client/server architecture** A network architecture in which each computer or process on the network is either a client or a server. . . . **client-side** Occurring on the client side of a client-server system.”) (emphasis in original).

b. Amplify’s Proposed Construction

Amplify’s proposed construction is wrong for at least the following two reasons.

First, Amplify improperly limits the “client computer” to a computer “that is used by the tested individual to enter test responses.” However, as explained above in connection with the “individual,” “user,” and “test taker” terms, the specification *expressly contradicts* Amplify’s construction because it discloses that a “user” *other than* the person being tested may enter the responses into the system. *See* ’452 patent, 6:34-38 (“Each client computer 54 . . . may be used by *an individual user, such as a parent of a child or a test administrator*, to access the diagnostic tool stored on the server.”); *id.* 6:63-67 (“The diagnostic tool 66 may also use a child’s scores on the one or more tools in order to recommend to the *user* of the client computer (*e.g., the parent of the child*) which training tools *the parent* may consider downloading to help the child with any deficiencies.”); *id.* 9:27-29 (“In step 142, the questionnaire may display a first question to the *user* of the client computer, such as *the parent of the child being tested*.”). Amplify’s construction would improperly exclude these embodiments.

Second, Amplify seeks to import into the construction of “client computer” the limitation that it “communicates with the server computer.” However, this is improper because it would render other claim limitations superfluous. *See Power Mosfet Techs.*, 378 F.3d at 1410 (“[I]nterpretations that render some portion of the claim language superfluous are disfavored.”).

For example, claim 1 already specifies the precise communication that must take place between client and server in another limitation. *See* '452 patent, claim 1 (“each client computer comprising ... means for communicating the responses for each test back to the server computer”).

4. “server computer” and “server”

| Claim Term | Heinemann’s Proposed Construction | Amplify’s Proposed Construction |
|--|--|--|
| “server computer” (claims 1, 52) “server” (claims 2, 35-37, 39, 42-45, 48, 51-52) | Plain and ordinary meaning | A computer in a client/server computer system that stores tests, which are downloaded by a client computer, and scores the tests and recommends training modules based on the scores of the tests. |

a. Heinemann’s Proposed Construction

As with “client computer” discussed above, “server” has a plain and ordinary meaning that is self-explanatory to a person of ordinary skill in the art, and therefore requires no further construction. Balakrishnan Decl. ¶ 91. The specification uses the term “server” consistent with this ordinary meaning. For example, it explains that the “preferred embodiment of the invention may include one or more software applications that. . . may be stored on a server” and that the “client computers may send data back to the server.” ’452 patent, 3:56-59; 6:32.

Similarly, Dr. Balakrishnan explains that a “server” would have been readily understood by a person of ordinary skill in the art at the time of the invention. Balakrishnan Decl. ¶ 91. A server is simply the back-end component in a client-server architecture that provides data to one or more clients. *Id.*

b. Amplify’s Proposed Construction

Amplify’s proposed construction is wrong for at least the following two reasons.

First, Amplify improperly imports limitations into the terms “server” and “server computer” that would render other claim language superfluous. For example, Amplify’s proposed construction improperly limits a “server” to a “computer system that stores tests, which are downloaded by a client computer, and scores the tests and recommends training modules based on the scores of the tests.” However, independent claim 1, for example, already specifies that the “server computer compris[es] one or more tests [and] a scorer” and “further comprises a recommender,” and that a “client computer[] ... may establish a communications session with the server computer to download the one or more tests from the server computer[.]” ’452 patent, claim 1. Amplify’s construction renders these other limitations superfluous.

Second, in contrast, other claims that include the term “server” do **not** require all of the limitations that Amplify improperly seeks to import. For example, independent claim 35 is directed to “[a] server,” and makes no mention of “download[ing] by a client computer,” as Amplify’s construction requires. It is improper to import limitations from one claim into another claim, where no such limitations exist in the latter. *See Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1326 (Fed. Cir. 2003) (“Unasserted [independent] claim 3 ... is virtually identical to [independent] claim 1, save for the express limitation regarding the use of ‘exogenous DNA’ Our court has made clear that when a patent claim ‘does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement.’ ... There is a rebuttable presumption that different claims are of different scope.”) (citations omitted). Where the claims require the server to include certain components, they state so explicitly.

5. “scorer” and “scoring”

| Claim Term | Heinemann’s Proposed | Amplify’s Proposed Construction |
|------------|----------------------|---------------------------------|
|------------|----------------------|---------------------------------|

| | Construction | |
|-------------------------|----------------------------|--|
| “scorer” (claims 1, 35) | Plain and ordinary meaning | A portion of a system for testing an individual’s reading and pre-reading skill(s) that is located on the server computer. |
| “scoring” (claim 18) | Plain and ordinary meaning | Determining scores of one or more tests by a server computer without human interaction. |

a. Heinemann’s Proposed Constructions

The terms “scorer” and “scoring” are unambiguous, and would have been readily understood by those of skill in the art at the time of the invention according to their plain meaning. Balakrishnan Decl. ¶ 94. A “scorer” is simply a component (*e.g.*, a software module) that can determine a score. Similarly, “scoring” refers to the function of the scorer, and is a commonly understood and self-explanatory term, particularly in the context of testing. *See Phillips*, 415 F.3d at 1314 (“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.”). Indeed, the concepts of a “scorer” and “scoring” are well-understood in many contexts, such as testing, sports, or video games.

Heinemann’s proposal that “scorer” be given its plain and ordinary meaning is consistent with the specification, which describes the scorer as a component that “determine[s] whether or not the child correctly identified each item.” ’452 patent, 8:9-11.

For example, the specification explains:

The child may interact with each test and respond to the test with responses. Those responses are uploaded to the server and gathered by the scorer 104. The scorer may accumulate the total score for each test and then store the score in the DB [database] 62.

Id. 7:33-37.

[T]he module may determine the score of the child in step 552 wherein *the score is calculated as a percentage of items that have been correctly answered.*

Id. 16:47-50; *see also* Balakrishnan Decl. ¶¶ 94-95. According the term “scorer” its plain and ordinary meaning is furthermore consistent with the claim language. For example, claim 1 claims “a scorer for determining a score for each test.” ’452 patent, claim 1; *see also id.* claim 35 (same).

Similarly, the claim language makes clear that “scoring” has a readily understood meaning in the context of the invention—that is, determining a score based on the user’s responses to each test. For example, claim 18 states that the “scoring” is performed on “the user’s responses.” *See, e.g.,* ’452 patent, claim 18 (“scoring the user’s responses to each test”). The specification also describes a “method” that “comprises ... scoring the user’s responses to each test....” *Id.* 4:31-36; *see also id.* 3:9-10; Balakrishnan Decl. ¶¶ 94-95.

Accordingly, the terms “scorer” and “scoring” should be given their plain and ordinary meaning and require no further construction.

b. Amplify’s Proposed Constructions

Amplify’s proposed constructions are wrong for at least the following reasons.

First, Amplify’s proposed construction of “scorer” is ambiguous. Amplify proposes that a “scorer” is “[a] portion of a system for testing an individual’s reading and pre-reading skill(s) that is located on the server computer.” The phrase “for testing” makes it unclear whether *the scorer* is “for testing” or *the system* is “for testing.” The “scorer” is used for “scoring,” not “testing,” so presumably Amplify means that the system is “for testing.” Under this interpretation of Amplify’s construction, a “scorer” need only be: (1) “a portion of” the claimed system; and (2) “located on the server computer.” This overly broad construction could apply

equally to, for example, claim 1’s “tests,” which are likewise “a portion of” the claimed system and “located on the server computer,” and is therefore improper.

Second, Amplify’s requirement that the “scorer” be “located on the server computer” and that “scoring” be performed “by a server computer” renders other language in the claims superfluous. For example, claim 35 is directed to “[a] server ... comprising ... a scorer for determining a score for each test.” ’452 patent, claim 35; *see also TouchTunes Music*, 727 F. Supp. 2d at 233 (“A claim construction that renders claim language superfluous is almost always incorrect.”). In stark contrast, claim 18—the only claim in which the term “scoring” appears—includes no limitation that a scorer, which would perform the “scoring,” be located on a server computer. Where the claims require the scorer or scoring to be on the server, they state so explicitly. Balakrishnan Decl. ¶ 96.

Finally, Amplify’s proposed requirement that scoring be performed “without human interaction” is incorrect because claim 18 recites no such limitation, and to import such a requirement would improperly limit the claim to a preferred embodiment—a “cardinal sin” of claim construction. *See SciMed Life Sys.*, 242 F.3d at 1340.

6. “test”

| Claim Term | Heinemann’s Proposed Construction | Amplify’s Proposed Construction |
|---|-----------------------------------|--|
| “test” (claims 1, 4-5, 7-18, 21-22, 24-35, 39, 42-45, 48, 51-52, 55-68) | Plain and ordinary meaning | An assessment of an individual’s reading and pre-reading skills, which are downloaded by a client computer, and scores the tests and recommends training modules based on the scores of the tests. |

a. Heinemann’s Proposed Construction

The term “test” should be given its plain and ordinary meaning as it would have been readily understood by those of skill in the art at the time of the invention. Balakrishnan Decl. ¶

97; *see also* Maier Decl. Ex. 4, Merriam-Webster's Collegiate Dictionary (10th ed. 1996) 1218 (defining “test” as “something (as a series of questions or exercises) for measuring the skill, knowledge, intelligence, capacities, or aptitudes of an individual or group.”). The meaning of “test” is plain and unambiguous in the claim language. Further, during prosecution, the applicants explicitly stated that they intended “test,” as it appears in the ’452 patent, to carry its plain and ordinary meaning. *See* Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5 (“In particular, the term ‘test’ is used in its ordinary meaning of a mechanism for testing a particular aspect of a user...”); *see also* Balakrishnan Decl. ¶ 97. Thus, the term “test” should be given its plain and ordinary meaning and requires no further construction.

b. Amplify’s Proposed Construction

Amplify’s proposed construction is wrong for three reasons.

First, Amplify limits “test” to a specific type of test—namely, one that “assess[es] an individual’s reading and pre-reading skills.” As explained above, the applicants intended that the term “test” be afforded its plain meaning. *See* Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5 (“In particular, the term ‘test’ is used in its ordinary meaning of a mechanism for testing a particular aspect of a user....”). Where the applicants intended to further define a test, they did so explicitly. *See, e.g.*, ’452 patent, claims 5, 22, 39, 56 (dependent claims defining types of tests).

Second, Amplify’s construction improperly requires the tests to be “downloaded by a client computer.” Such a construction would not only render language in the claims redundant, but it would also import limitations into the claims where none exist. For example, claim 1 already recites “one or more client computers that may ... download the one or more tests from the server computer.” *Id.* 18:1-3. Amplify’s proposed limitation would render this language

redundant. In contrast, claim 18 includes no such requirement that tests be “downloaded by a client computer.” *See id.* claim 18; *see also Phillips*, 415 F.3d at 1314 (“Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.”). Balakrishnan Decl. ¶ 98.

Third, Amplify’s construction is illogical to the extent that it requires the “test” to “score[] the tests and recommend[] training modules based on the scores of the tests.” The “test” does not “score the tests.” Claim 1, for example, claims a “scorer” that scores the tests. ’452 patent, claim 1. Nor does the “test” “recommend[] training modules.” Instead, claim 1 recites a “recommender” that makes recommendations. Balakrishnan Decl. ¶ 100.

7. “receiving a user/user’s response,” “receiving a response,” “receiving user input” and “receiving responses”

| Claim Term | Heinemann’s Proposed Construction | Amplify’s Proposed Construction |
|---|-----------------------------------|---|
| “receiving a user/user’s response” (claims 1, 11, 14, 17, 28, 31, 34, 62, 65, 68) “receiving a response” (claims 8-10, 12, 16, 18, 25, 27, 29, 33, 59-61, 63, 67) “receiving user input” (claims 7, 24, 58) | Plain and ordinary meaning | Receiving response(s) on the client computer entered by the tested individual without guidance or assistance from a teacher or other skilled person. |
| “receiving a user/user’s response” (claims 45, 48) “receiving a response” (claims 42-44) “receiving responses” (claim 35) | Plain and ordinary meaning | Receiving a response(s) from a client computer that was/were entered by the tested individual on the client computer without guidance or assistance from a teacher or other skilled person. |

a. Heinemann’s Proposed Construction

Each of these phrases describe “receiving” a response or input from a user. The first group of terms relates to receiving responses directly from a user, *e.g.*, at a client computer

(claim 1), “from an individual” (claim 18), or at an apparatus (claim 52, from which claims 58-68 depend). The second group of terms relates to receiving responses at a server. *See* ’452 patent, claim 35 (directed to “[a] server,” with the rest of the claims depending from claim 35 and therefore limited to a “server”). In both cases, each phrase consists entirely of commonly understood words whose meaning is readily-understood to persons of ordinary skill in the art. Balakrishnan Decl. ¶ 101. Therefore, these terms should be given their plain and ordinary meaning, and no further construction is required.

As the claim language suggests, the plain and ordinary meaning of “receiving a user/user’s response/a response/user input” is receiving a response or input from a user. Further, the claim language provides the context showing whether the phrase is used in relation to a client computer, apparatus, or other device that a user may interact with directly (*see, e.g., id.* claim 1 (“each client computer comprising ... means for receiving a user response...")), or in relation to a server (*see, e.g., id.* claim 35 (“[a] server ... comprising ... means for receiving responses...")). Thus, as explained in Section III.A.3, for the claims directed to a client, each term refers to the process of receiving an input from a user via some type of input device, such as a keyboard, mouse, touch pad, on-screen buttons, etc. Similarly, as explained in Section III.A.4, for claims directed to a server, each term refers to the communications protocol used by a server to receive inputs and responses over a network.

Heinemann’s proposed constructions are further supported by the specification, which explains that, in the case of a client, a user can input responses into the claimed device—regardless of whether it is an apparatus, client computer, or other device in the system—using some type of input device. *See, e.g.,* ’452 patent, 4:31-36 (“The method further comprises **receiving a response** from the individual to each stimulus....”); *id.* 10:14-17 (“In step 166, **the**

user may use the user input device, such as the keyboard, the mouse or the microphone of the speech recognition software, to respond to the question and the module may receive the response.”); *id.* 12:18-20 (“The module may then *receive a user’s response from the user entering the response into the input devices* as described above in step 266.”); *id.* 13:20-24 (“The module may then ask the user to identify the graphical item referred to by the spoken word in step 364 and *receive the response from the user using one of the input devices....*”).

In the case of a server, the specification explains that the server receives data from the client via a communications protocol. *See id.* 6:6-10 (“In the embodiment shown, the communications network is the Web and a *typical Web communications protocol*, such as the hypertext transfer protocol (HTTP), may be used *for communications between the server and the client computer.*”); *id.* 6:29-34 (“In the preferred embodiment, the Web pages may be communicated to the one or more client computers using the HTTP protocol and *the client computers may send back data to the server, such as test responses, using the same protocol.*”)

Finally, a person of ordinary skill in the art would readily understand what is meant by receiving a response or input from a user, whether it occurs at the client or the server, without any further construction of these terms. Balakrishnan Decl. ¶¶ 101-102.

a. Amplify’s Proposed Construction

Amplify concedes that the disputed phrases are readily understandable to a person of ordinary skill in the art, as it simply repeats the terms “receiving” and “responses” in its constructions. However, with respect to the first group of terms, Amplify seeks to improperly require that: (1) “receiving responses” must be done on the client computer; (2) the responses are entered by “the tested individual”; and (3) the responses are entered without guidance or assistance from a teacher or other skilled person. Similarly, with respect to the second group of terms, Amplify requires that: (1) the responses are received “from a client computer”; (2) the

response(s) “was/were entered by the tested individual on the client computer”; and (3) the responses are entered “without guidance or assistance from a teacher or other skilled person.”

There is no basis for any of these limitations.

First, with respect to the client-based terms, Amplify’s construction—which requires that the responses are received on the *client computer*—would, in some cases, render other claim language superfluous, while in other cases would improperly import limitations from other claims. *Compare* ’452 patent, claim 1 (“each client computer comprising ... means for receiving a user response.”) *with* claim 18 (no requirement that “receiving a response” must be performed on a “client computer,” or, indeed, any other specific device).

Second, with respect to both the client- and server-based terms, the claims do not require that “the tested individual” “enter[]” the responses “without guidance or assistance from a teacher or other skilled person,” as Amplify proposes. Indeed, the specification and file history expressly discloses embodiments where “the tested individual” does not enter the responses him- or herself. *See, e.g., id.* 6:34-38 (“Each client computer 54 ... may be used by an individual user, *such as a parent of a child or a test administrator*, to access the diagnostic tool stored on the server.”); Maier Decl. Ex. 1, ’452 File History, 3/30/2001 Response to Office Action dated 11/7/2000, p. 5 (“The system permits people with various different knowledge levels ... to administer the diagnostic test. For example, *a parent* ... may use the system to diagnose a deficiency in his/her child....”). Further, a person of ordinary skill in the art would understand that when the user is a young child, assistance from a parent/teacher may be necessary.

Balakrishnan Decl. ¶¶ 43, 103.

Finally, Amplify’s proposed construction for these terms is inconsistent with its positions on invalidity as set forth in its invalidity contentions. For example, Amplify identified that the

“receiving...” terms can include guidance or assistance from a teacher or proctor. *See, e.g.*, Amplify’s Invalidity Contentions, Ex. 5, pp. 4-8 (“With very young children, for example, responses to questions, or whether questions were answered correctly or incorrectly could be manually *input by a teacher or proctor.*”).

8. “presenting” and “displaying at least one of a graphical image and audio”

| Claim Term | Heinemann’s Proposed Construction | Amplify’s Proposed Construction |
|--|-----------------------------------|--|
| “presenting” (claim 18) | Plain and ordinary meaning | Presenting to the tested individual without human intervention or guidance or assistance from a teacher or other skilled person. |
| “displaying at least one of a graphical image and audio” (claim 1) | Plain and ordinary meaning | Presenting on a client computer to the tested individual a graphical image or audio without human intervention or guidance or assistance from a teacher or other skilled person. |

a. Heinemann’s Proposed Constructions

The terms “presenting” and “displaying at least one of a graphical image and audio” are readily understandable by persons of ordinary skill in the art and lay persons alike, such that they require no further construction. Balakrishnan Decl. ¶ 104. “Presenting” and “displaying” both refer to the act of making something perceivable to a person (whether visually, audibly, or otherwise). Maier Decl. Ex. 5, Random House Webster’s Unabridged Dictionary (2d. ed. 1997) 1529 (“present... 8. to show or exhibit....”).

The specification uses the terms “presenting” and “displaying” consistent with their plain and ordinary meaning. *See* ’452 patent, 4:26-27 (“The method comprises *presenting* one or more stimuli to the individual”); *id.* 8:22-26 (“each test 102 may *display images* on the display....”); *id.* 9:34-45 (“present the next question to the user if there are additional questions.”); *id.* 10:6-14 (“[T]he rhyme recognizing module may *display two words along with*

their pictures on the user’s display screen. . . . For example, the module may *display the picture* of a sun and a picture of a gun. . . . [T]he module may *display text* below the pictures asking the user if the two words rhyme. . . . [T]he module may *present a verbal prompt* asking the user if the two words rhyme since the user s of the system may not be able to read.”); *id.* at 14:4-9 (“In the example shown in FIG. 16, the sentence ‘I have two brothers’ was *presented* to the user....”); *id.* 14:31-32 (“In step 422, the user is *presented with a spoken word*.”). Thus, these terms require no construction other than their plain and ordinary meaning.

b. Amplify’s Proposed Constructions

Amplify concedes that the terms “presenting” and “displaying...” require no further construction, as its proposed constructions merely repeat these terms. However, Amplify seeks to improperly limit the claim by requiring that any presenting or displaying be “to the tested individual” and that it be done “without human intervention or guidance or assistance from a teacher or other skilled person.” Amplify’s construction is incorrect for several reasons.

First, the specification uses these terms without any qualification on who the user may be. *Id.* 12:14-15 (“In step 262, the module may *present* a spoken word ... *to the user*.”); *id.* 12:36-39 (“In particular, the module may *present* a spoken word and a picture of the item in step 280 and *query the user* about which item in a sequence of items has a similar ending sound in step 282.”); *id.* 13:17-24 (“In step 362, the module may display one or more graphical representations of items and *present* a spoken word.... The module may then *ask the user* to identify the graphical item....”); *id.* 16:24-26 (“Instead of speaking the word to the user, the module may *present* the word *to the user* is [sic] a visual manner.”).

Second, Amplify’s construction of “displaying...” to include “a client computer” renders the preceding claim language superfluous, which recites that “*each client computer comprises* means for displaying at least one of a graphical image and audio....” *Id.* claim 1.

Third, as explained above, the specification makes clear that the “user” or “individual” that uses the invention is not limited to “the tested individual” or that it be done “without human intervention or guidance from a teacher or other skilled person.” Quite the contrary, the specification explicitly discloses that the person being tested may be assisted by a teacher, parent or other person. Accordingly, the specification and file history foreclose Amplify’s construction, which would improperly limit the claim to a preferred embodiment.

Finally, Amplify’s proposed constructions are inconsistent with its positions on invalidity as set forth in its invalidity contentions. For example, Amplify identifies that the “presenting” and “displaying...” terms can include guidance or assistance from a teacher. *See, e.g.*, Amplify’s Invalidity Contentions, Ex. 4, pp. 32-35 (“presenting”); Ex. 5, pp. 17-22 (“presenting”); Ex. 1, pp. 6-10 (“displaying....”); Ex. 5, pp. 4-8 (“displaying....”).

IV. CONCLUSION

For the foregoing reasons, the Court should adopt Heinemann’s proposed constructions.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served on all counsel of record by electronic mail on the 19th day of June 2014.

/s/ Cosmin Maier

Cosmin Maier